



Department of Transportation
Federal Aviation Administration
Office of Airworthiness
Washington, D.C.

TSO-C88a

Date 8/18/83

Technical Standard Order

Subject: TSO-C88a, ~~TSO-C88a, AUTOMATIC PRESSURE ALTITUDE REPORTING CODE GENERATING EQUIPMENT~~

(a) Applicability.

(1) Minimum Performance Standard. This Technical Standard Order (TSO) prescribes the minimum performance standard that automatic pressure altitude reporting code generating equipment must meet in order to be identified with the applicable TSO marking. This TSO has been prepared in accordance with the procedural rules set forth in Subpart O of Federal Aviation Regulations (FAR) Part 21. New models of automatic pressure altitude reporting code generating equipment that are to be so identified and that are manufactured on or after the date of this TSO must meet the standards set forth in Society of Automotive Engineers, Inc. (SAE) Aerospace Standard (AS) 8003, "Minimum Performance Standard for Automatic Pressure Altitude Reporting Code Generating Equipment," dated July 1974.

(2) Environmental Standard. The conditions and procedures prescribed in RTCA Document No. DO-160A, "Environmental Conditions and Test Procedures for Airborne Equipment" dated January 1980 are to be used in lieu of RTCA Document No. DO-138, "Environmental Conditions and Test Procedures for Airborne Electronic/Electrical Equipment and Instruments" dated June 27, 1968, which is incorporated as a reference in SAE AS 8003.

(3) Additions. If the equipment design implementation includes a digital computer, the computer software package must be validated and verified in a manner acceptable to the Administrator. An acceptable means of compliance for validation and verification of the computer software package is contained in RTCA/DO-178, "Software Considerations in Airborne Systems and Equipment Certification," November 18, 1981.

(b) Marking.

(1) In addition to the marking specified in FAR § 21.607(d), the following information shall be legibly and permanently marked on the major equipment components:

(i) The environmental categories in which it has been qualified to operate in accordance with RTCA document DO-160A.

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A-FAC-1, 2, 3 (LTD); A-X(CD)-3; AVN-1 (2 copies)

- (ii) Maximum ~~operating~~ altitude,
- (iii) ~~Nominal~~ power ~~input~~ rating, (electrical voltage and frequency).

(2) Each separate ~~component of equipment~~ that is manufactured under this TSO (antenna, receiver, ~~controller~~, etc.) ~~must~~ be permanently and legibly marked with at least the ~~name of the manufacturer~~, the TSO number, digital ~~computer software~~ version, (if ~~applicable~~), and the ~~environmental categories over which it has been tested~~.

(c) Data Requirements.

(1) In ~~addition to~~ FAR § 21.605, the ~~manufacturer must~~ furnish the Manager, Aircraft Certification Office (ACO), Federal Aviation Administration (FAA), having purview of the manufacturer's facilities, one ~~copy~~ each of the following ~~technical~~ data.

- (i) Operating instructions.
- (ii) ~~Equipment~~ limitations.
- (iii) Installation procedures and limitations.
- (iv) Schematic drawings ~~as applicable to~~ the installation procedures.
- (v) Wiring diagrams as applicable ~~to~~ the installation procedures.
- (vi) Specifications.
- (vii) List of the ~~major~~ components (by part number) that ~~make up~~ the ~~equipment~~ system ~~complying~~ with the standards prescribed in this TSO.
- (viii) Manufacturer's ~~TSO~~ qualification test report.
- (ix) Nameplate drawing.

(2) In addition ~~to~~ those data requirements that are ~~to be~~ furnished directly to the FAA, each ~~manufacturer must~~ have available for review by the Manager, ~~ACO~~ having ~~purview~~ of the manufacturer's facilities the following ~~technical~~ data:

- (i) A drawing list, enumerating ~~all~~ the drawings and processes that are necessary ~~to~~ define the article design.
- (ii) The functional test specification to be used to test each production article ~~to ensure compliance~~ with this TSO.

(iii) ~~Equipment~~ calibration and ~~maintenance~~ procedures.

(iv) ~~Schematic~~ drawings.

(iii) ~~Equipment~~ calibration procedures.

(iv) Corrective ~~maintenance~~ procedures (within 12 months after TSO authorization).

(v) Schematic drawings.

(vi) Wiring diagrams.

(d) Data to be furnished with manufactured units. One ~~copy~~ of the data and information specified in paragraphs (c)(I)(i) through (vii) of this TSO and instructions for periodic maintenance and calibration which are necessary for ~~continued~~ airworthiness ~~must go to~~ each person receiving for use on or ~~more~~ articles manufactured under this TSO.

(e) ~~Previously Approved Equipment.~~ Automatic pressure altitude reporting ~~code generating equipment~~ approved prior to the date of this TSO may ~~continue to be~~ manufactured under the provision of the original approval.

(f) Availability of Reference Documents.

(1) Copies of SAE AS 8003 may be purchased from the Society of Automotive Engineers, Inc., Department 331, 400 Commonwealth Drive, Warrendale, Pennsylvania 15096.

(2) Copies of RTCA Document Nos. DO-180A and DO-178 may be purchased from the Radio Technical Commission for Aeronautics Secretariat, One McPherson Square, Suite 500, 1425 K Street, N.W., Washington, D.C. 20005.

(3) Federal Aviation Regulations Part 21, Subpart O, and Advisory Circular 20-410A, "Index of Aviation Technical Standard Orders," may be reviewed at the FAA Headquarters in the Office of Airworthiness, Aircraft Engineering Division (AWE-110), and at all regional ACO's.



M. C. BEARD
Director of Airworthiness

